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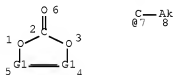
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<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d sta que l23
 L20 2628 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 16.326.4/RID
 L21 STR



VAR G1=C/7
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS UNLIMITED

GRAPH ATTRIBUTES:
 RSPEC 1
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
 L23 207 SEA FILE=REGISTRY SUB=L20 CSS FUL L21

100.0% PROCESSED 1951 ITERATIONS 207 ANSWERS
 SEARCH TIME: 00.00.01

=> => d l46
 L46 HAS NO ANSWERS
 L46 STR



VAR G1=AK/CB
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS UNLIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

=> fil hcaplus
 FILE 'HCAPLUS' ENTERED AT 14:20:40 ON 07 JAN 2010
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FILE COVERS 1907 - 7 Jan 2010 VOL 152 ISS 2
 FILE LAST UPDATED: 6 Jan 2010 (20100106/ED)
 REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2009
 USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2009

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 167 bib abs hitstr tot

L67 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2005:76450 HCAPLUS Full-text
 DN 142:180441
 TI Nonaqueous electrolyte solution for secondary lithium battery and the battery
 IN Abe, Koji; Miyoshi, Kazuhiro; Kuwata, Takaaki
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 48 pp.
 CODEN: PIXXD2

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI	WO 2005008829	A1	20050127	WO 2004-JP10194	20040716 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2532579	A1	20050127	CA 2004-2532579	20040716 <--
	EP 1650826	A1	20060426	EP 2004-747660	20040716 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	CN 1853307	A	20061025	CN 2004-80026556	20040716 <--
	CN 100517853	C	20090722		
	ZA 2006000431	A	20070425	ZA 2006-431	20060116 <--
	IN 2006CN00200	A	20070629	IN 2006-CN200	20060116 <--
	KR 2006035767	A	20060426	KR 2006-701080	20060117 <--
	US 20060177742	A1	20060810	US 2006-564852	20060117 <--
	IN 2007CN04612	A	20080328	IN 2007-CN4612	20071016 <--
FR&I	JP 2003-198421	A	20030717	<--	
	JP 2003-383403	A	20031113	<--	
	WO 2004-JP10194	W	20040716	<--	
	IN 2006-CN200	A3	20060116		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 142:180441

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The electrolyte solution contains 0.01-10% vinyl carbonate compound I (R1 and R2 = H or C1-4 alkyl groups) and 0.01-10% alkyne compds. selected from II-VII (R's and Y's defined; and x and p = 1 or 2).

IT 96-49-1, **Ethylene carbonate**

108-32-7, **Propylene carbonate**

RL: DEV (Device component use); USES (Uses)

(electrolyte solns. containing vinyl carbonate derivs. and alkyne compds. for secondary lithium batteries)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS

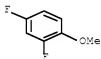
CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



IT 96-06-6, **tert-Butylbenzene** 452-10-8,
 2,4-Difluoroanisole 462-06-6, **Fluorobenzene** 827-52-1
 , Cyclohexylbenzene 872-36-6, **Vinylene**
carbonate 2049-95-8, **tert-Amylbenzene**
 61764-71-4 79493-91-7, **Dipropargyl carbonate**
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing vinyl carbonate derivs. and alkyne compds.
 for secondary lithium batteries)
 RN 98-06-6 HCAPLUS
 CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 452-10-8 HCAPLUS
 CN Benzene, 2,4-difluoro-1-methoxy- (CA INDEX NAME)



RN 462-06-6 HCAPLUS
 CN Benzene, fluoro- (CA INDEX NAME)



RN 827-52-1 HCAPLUS
 CN Benzene, cyclohexyl- (CA INDEX NAME)



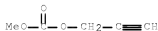
RN 872-36-6 HCAPLUS
 CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 2049-95-8 HCAPLUS
 CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2002:674628 HCAPLUS [Full-text](#)
 DN 137:188305
 TI Nonaqueous secondary battery having enhanced discharge capacity retention
 IN Hamamoto, Toshikazu; Abe, Koji; Takai, Tsutomu; Matsumori,
 Yasuo; Ueki, Akira
 PA Ube Industries, Ltd., Japan
 SO U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S. Ser. No. 631,518.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI	US 20020122968	A1	20020905	US 2001-21130	20011022
	US 6866966	B2	20050315		
	JP 2001052735	A	20010223	JP 1999-219708	19990803
	JP 3444243	B2	20030908		
	JP 2002134167	A	20020510	JP 2000-321146	20001020
	JP 2002203594	A	20020719	JP 2000-363656	20001129



RL: DEV (Device component use)

(nonaq. secondary battery having enhanced discharge capacity retention)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



RN 872-36-6 HCAPLUS

CN 1,3-Dioxol-2-one (CA INDEX NAME)



IT 827-52-1, Cyclohexylbenzene 61764-71-4, **Methyl 2-propynylcarbonate**

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(nonaq. secondary battery having enhanced discharge capacity retention)

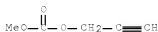
RN 827-52-1 HCAPLUS

CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 61764-71-4 HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d 168 bib abs hitstr tot

L68 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2009:28460 HCAPLUS Full-text
 DN 150:80945
 TI Nonaqueous electrolyte solutions and secondary batteries with improved high-temperature storage stability
 IN Usami, Kyohei; Hirata, Kazuki; Yamada, Manabu; Taki, Takayuki; Tomita, Atsuo; Asano, Hiroto
 PA Denso Co., Ltd., Japan; Adeka Co., Ltd.
 SO Jpn. Kokai Tokkyo Koho, 22pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

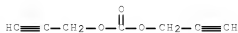
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI	JP 2009004352	A	20090108	JP 2007-304108	20071126
FR	JP 2007-135825	A	20070522		
OS	MARPAT 150:80945				

AB The solns. contain electrolyte salts dissolved in organic solvents, Si compds. chosen from XSiR1R2R3(OR4)nOR3SiR1R2X, XSiR1R2R3OCOR3SiR1R2X, XSiR1R2R3OCOR5CO2R3SiR1R2X, and R6OCO2R3SiR1R2X (R1, R2 = C1-8 alkyl; R3, R4 = C2-8 alkylene; R5 = C1-8 alkylene; C2-8 alkenylene, C2-8 alkynylene, single bond; R6 = C1-8 alkyl, C2-8 alkenyl, C2-8 alkynyl; X = fluoro, C1-8 alkoxy, C2-8 alkenyloxy, C2-8 acyloxy, C1-8 sulfonyl, isocyanyl, isothianyl, cyano; n = 0-2), and optionally unsatd. cyclic carbonates, unsatd. linear carbonates, and/or unsatd. diesters. The batteries show low internal resistance and high capacity after high-temperature storage.

IT 872-36-6, **Vinylene carbonate**
 79493-91-7, **Dipropargyl carbonate** 220788-96-5
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte solns. containing silicon compds. and optionally unsatd. carbonates or diesters)
 RN 872-36-6 HCAPLUS
 CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



RN 220788-96-5 HCAPLUS
 CN Carbonic acid, 2-propen-1-yl 2-propyn-1-yl ester (CA INDEX NAME)



L68 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2007:505050 HCAPLUS Full-text

DN 146:444961

TI Pentafluorophenyl compounds, their manufacture, nonaqueous electrolytic solutions containing them, and secondary lithium batteries

IN Abe, Hiroshi; Kuwata, Takaaki; Takase, Manabu

PA Ube Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 19pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
FI	JP 2007112737	A	20070510	JP 2005-304850	20051019
FRAN	JP 2005-304850		20051019		
OS	MARPAT 146:444961				

AB C6F2OR1OR2 [I; R1 = COCO, SO, SO2; R2 = C1-12 (halo)alkyl, C3-12 (halo)cycloalkyl, C2-12 (halo)alkenyl, etc.; when R1 = COCO, R2 is aryl-free group] are manufactured by condensation of C6F5OH with R2OR1X (R1, R2 = same as above; X = halo) in the presence of bases. The electrolytic solns. contain I or (C6F5O)nY (Y = alkali metal, alkaline earth metal; n = 1, 2), preferably further contain cyclic carbonates and linear carbonates, and more preferably contain vinylene carbonate, 1,3-propanesultone, and/or alkynes. The batteries show high discharge capacity retention after repeated cycles.

IT 96-49-1, **Ethylene carbonate**

872-36-6, **Vinylene carbonate**

61764-71-4, **Methyl propargyl carbonate**

RL: TEM (Technical or engineered material use); USES (Uses)

(electrolytic solution; manufacture of pentafluorophenyl compounds as additives for nonaq. electrolytic solns. for secondary lithium batteries)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 872-36-6 HCAPLUS

CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 61764-71-4 HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



L68 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2005:141448 HCAPLUS Full-text
 DN 142:243601
 TI Secondary lithium battery and its nonaqueous electrolyte solution
 IN Abe, Koji; Miyoshi, Kazuhiro; Kuwata, Takasaki;
 Matsumori, Yasuo
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 36 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI	WO 2005015677	A1	20050217	WO 2004-JP11714	20040809
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CN 1836347	A	20060920	CN 2004-80022913	20040809
	CN 100431217	C	20081105		
	KR 2006060683	A	20060605	KR 2006-702791	20060209
	US 20060246356	A1	20061102	US 2006-567902	20060210
FPAI	JP 2003-291129	A	20030811		
	JP 2003-383406	A	20031113		
	WO 2004-JP11714	W	20040809		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The battery comprised a cathode, an anode, and a nonaq. electrolyte solution having an electrolyte salt dissolved in a nonaq. solvent mixture; where the cathode is a Li composite oxide containing material, the anode is a graphite containing material; and the electrolyte solution contains a dialkyl oxalate and a vinylene carbonate and/or 1,3-propane sultone.

IT 96-49-1, **Ethylene carbonate**
 108-32-7, **Propylene carbonate**

RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing dialkyl oxalates and vinylene carbonate and/or 1,3-propane sultone for secondary lithium batteries)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS

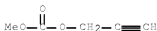
CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



IT 872-36-6, Vinylene carbonate
 61764-71-4, Methyl propargyl carbonate
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing dialkyl oxalates and vinylene
 carbonate and/or 1,3-propane sultone for secondary lithium
 batteries)
 RN 872-36-6 HCAPLUS
 CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2001:117401 HCAPLUS Full-text
 DN 134:165674
 TI Nonaqueous electrolyte solutions and secondary lithium batteries using the
 electrolyte solutions
 IN Hamamoto, Shunichi; Ueki, Akira; Abe, Hiroshi; Matsumori, Yasuo
 PA Ube Industries, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI	JP 2001043895	A	20010216	JP 2000-116327	20000418
	JP 3823683	B2	20060920		
	CN 1277468	A	20001220	CN 2000-122508	20000524
	CN 1248350	C	20060329		
	US 6927601	B1	20050809	US 2000-577470	20000524
PPAI	JP 1999-143222	A	19990524		
	JP 2000-116327	A	20000418		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The electrolyte solns. contain a cyclic and linear carbonate ester based
 solvent mixture, with the difference between the highest and the lowest
 reduction potentials of mixture components smaller 0.4V. Preferably, the

electrolyte solns. contain 0.1-4% 1,3-propanesultone and/or 0.1-4% 1,4-butanedisultone and 0.1-4% vinyl carbonate.

IT 96-49-1, **Ethylene carbonate**
 108-32-7, **Propylene carbonate**
 872-36-6, **Vinylene carbonate**
 61764-71-4, **Methyl propargyl carbonate**
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (nonaq. electrolyte solns. with controlled reduction p.d. among solvent
 components for secondary lithium batteries)
 RN 96-49-1 HCAPLUS
 CN 1,3-Dioxolan-2-one (CA INDEX NAME)



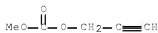
RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



RN 872-36-6 HCAPLUS
 CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)

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L78 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2007:747741 HCAPLUS Full-text
 DN 147:326034
 TI Functional Electrolytes
 AU Abe, Moji; Hattori, Takashi; Kawabe, Kazuyuki; Ushigoe,
 Yoshihiro; Yoshitake, Hideya
 CS Ube Industries, Limited, Ube, Yamaguchi, 755-8633, Japan
 SO Journal of the Electrochemical Society (2007), 154(8), A810-A815
 CODEN: JESQAN; ISSN: 0013-4651

PB Electrochemical Society
 DT Journal
 LA English

AB Certain triple-bonded compds. show a very interesting behavior in Li-ion batteries. These novel types of additives proved to improve battery performance, especially in cycle-ability. Propargyl methanesulfonate and propargyl Me carbonate show good performance among several triple-bonded compds. These triple-bonded compds. are studied in contradistinction with previously known double-bonded compds. (allyl methanesulfonate and allyl Me carbonate). The authors used MO calcns. for the selection of the additives and proved that the calculated LUMO and HOMO values agree well with the measured reduction and oxidation potentials, resp. To clarify the performance of the triple-bonded compds., electrochem. properties and cycle-ability were studied. The triple-bonded compds. are deliberately decomposed on the neg. electrode to produce a dense solid electrolyte interphase (SEI), showing an excellent improvement of cycle-ability. The nature and the component of the derived SEI were studied by XPS and Auger electron spectroscopy. These triple-bonded compds. contribute to the improved cycle-ability, because the SEI derived from the triple-bonded compds. has a thinner and denser morphol. than previously known additives.

IT 61764-71-4

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (functional electrolytes)

RN 61764-71-4 HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



IT 96-49-1, Ethylene carbonate
 108-32-7, Propylene carbonate

RL: TEM (Technical or engineered material use); USES (Uses)
 (functional electrolytes)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
 RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

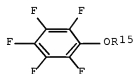
L78 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2010 ACS ON STN
 AN 2006:734562 HCAPLUS Full-text
 DN 145:191970
 TI Nonaqueous electrolyte solution and secondary lithium battery using the solution
 IN Abe, Koji; Kuwata, Takaaki
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 47 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006077763	A1	20060727	WO 2006-JP300278	20060112
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM CN 101107745 A 20080116 CN 2006-80002854 20060112 IN 2007CN03175 A 20070907 IN 2007-CN3175 20070719 KR 2007097072 A 20071002 KR 2007-716598 20070719 US 20090053598 A1 20090226 US 2007-814372 20070720 PRA1 JP 2005-12728 A 20050120 JP 2005-12729 A 20050120 WO 2006-JP300278 W 20060112				

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
 OS MARPAT 145:191970
 GI



I



II

AB The electrolyte solution has an electrolyte salt dissolved in a nonaqueous solvent; where the electrolyte solution further contains 0.1-10 weight% ethylene carbonate derivative I (R1-3 = H, halo, C2-12 alkynyl, C2-12 alkynyl, or C6-18 aryl group), and 0.01-10 weight% triple bond-containing compound and/or a pentafluorophenyl oxy compound II (R15 = C2-12 alkyl carbonyl, C2-12 alkoxy carbonyl, C7-18 aryloxy carbonyl, or C1-12 alkane sulfonyl group; and ≥1 H atom in R15 is substituted by halo atom or C6-18 aryl group). The battery has a cathode containing a Li composite oxide, an anode containing graphite, and the above electrolyte solution

IT 96-49-1, **Ethylene carbonate**
 RL: DEV (Device component use); USES (Uses)

(electrolyte solns. having ethylene carbonate
 derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing
 compds. for secondary lithium batteries)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



IT 98-06-6, **tert-Butyl benzene** 827-52-1, Cyclohexyl
 benzene 2049-95-8 61764-71-4, **Methyl 2-propynyl**
carbonate 79493-91-7, **Dipropargyl carbonate**

RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. having ethylene carbonate
 derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing
 compds. for secondary lithium batteries)

RN 98-06-6 HCAPLUS

CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 827-52-1 HCAPLUS

CN Benzene, cyclohexyl- (CA INDEX NAME)



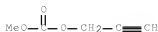
RN 2049-95-8 HCAPLUS

CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)

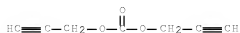


RN 61764-71-4 HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2010 ACS ON STN
 AN 2005:1292320 HCAPLUS Full-text
 DN 144:38333
 TI Nonaqueous electrolyte solution for secondary lithium battery
 IN Abe, Koji; Miyoshi, Kazuhiro; Kuwata, Takaaki
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 45 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005117197	A1	20051208	WO 2005-JP9900	20050530
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG CA 2568519 A1 20051208 CA 2005-2568519 20050530 EP 1772924 A1 20070411 EP 2005-743834 20050530 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, HR, LV, MK, YU CN 1989647 A 20070627 CN 2005-80024923 20050530 CN 100474688 C 20090401 US 20070231707 A1 20071004 US 2006-597652 20061127 US 7629085 B2 20091208 ZA 2006010287 A 20081029 ZA 2006-10287 20061208 KR 2007024663 A 20070302 KR 2006-727547 20061228 IN 2006CN04771 A 20070629 IN 2006-CN4771 20061228 PPAI JP 2004-159283 A 20040528 WO 2005-JP9900 W 20050530 OS MARPAT 144:38333 AB The electrolyte solution contains an electrolyte salt in a nonaq. solvent and contains 0.01-10% S acid ester and 0.01-10% triple bond compound of the formula R1(C.tplbond.C)pR2, R3C.tplbond.C(CR4R5)xOY1, Y2O(CR6R7)xC.tplbond.C(CR8R9)xOY3,				

Y40(CR10R11)xC.tplbond.CC.tplbond.C(CR12R13)xOY5,
 R14C.tplbond.C(CR15R16)xOCO2(CR17R18)xC.tplbond.CR19 or
 R20C.tplbond.C(CR21R22)xOWOY6 where R1 = C1-12 alkyl, C3-6 cycloalkyl, or aryl
 group; R2-R22 = H or C1-12 alkyl, C3-6 cycloalkyl, or aryl groups, p = 1 or 2,
 x = 1 or 2; R4 and R5, R6 and R7, R8 and R9, R10 and R11, R12 and R13, R15 and
 R16, R17 and R18, and R21 and R22 may form C3-6 cycloalkyl groups; W = -SO-, -
 SO2-, -COCO-; and the Y's are carboxylate ester, alkyl carbonyl, or alkyl
 sulfonyl groups.

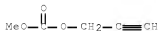
IT 96-49-1, **Ethylene carbonate**
 108-32-7, **Propylene carbonate**
 RL: DEV (Device component use); USES (Uses)
 (sulfur acid ester and alkyne compound additives in nonaq. electrolyte
 solns. for secondary lithium batteries)
 RN 96-49-1 HCAPLUS
 CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



IT 61764-71-4
 RL: MOA (Modifier or additive use); USES (Uses)
 (sulfur acid ester and alkyne compound additives in nonaq. electrolyte
 solns. for secondary lithium batteries)
 RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)

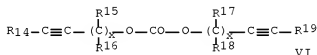
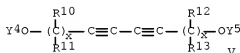
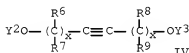
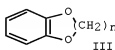
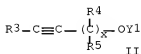
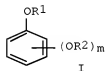


RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2002:273054 HCAPLUS [Full-text](#)
 DN 136:312532
 TI Nonaqueous electrolyte solution and secondary lithium battery using the
 solution
 IN Hamamoto, Shunichi; Abe, Hiroshi; Miyoshi, Kazubiro; Matsumori,
 Yasuo
 PA Obe Industries, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002110234	A	20020412	JP 2000-302080	20001002
	JP 4304404	B2	20090729		
FFAI	JP 2000-302080		20001002		
OS	MARPAT 136:312532				
GI					



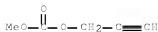
- AB The battery has a Li containing multiple oxide cathode, a graphite containing anode, and a nonaq. electrolyte solution; where the electrolyte solution contains a cyclic and linear carbonate ester based solvent mixture, which also contains 0.001-0.8% alkoxy benzene derivative I or II (R1, R2 = Me, or Et, m = 1-3, R2 may differ from each other when m = 2 or 3, n = 1 or 2) and 0.1-10% alkynyl derivs. III, IV, or V (R3-19 = C1-12 alkyl, C3-6 cycloalkyl, aryl, or H; R groups connected to the same C atom may join together to form a C3-6 cycloalkyl group, Y1-4 = -COOR20, -COR20, or -SO2R20, Y1-4 may differ from each other, R20 = C1-12 alkyl, C3-6 cycloalkyl, or aryl group, x = 1 or 2).
- IT 96-49-1, **Ethylene carbonate**
108-32-7, **Propylene carbonate**
RL: DEV (Device component use); USES (Uses)
(alkoxy benzene derivs. and alkynyl derivs. in carbonate ester solvent mixts. for secondary lithium battery electrolytes)
- RN 96-49-1 HCAPLUS
CN 1,3-Dioxolan-2-one (CA INDEX NAME)



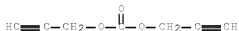
- RN 108-32-7 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



IT 61764-71-4 79493-91-7, **Dipropargyl carbonate**
 RL: MOA (Modifier or additive use); USES (Uses)
 (alkoxy benzene derivs. and alkynyl derivs. in carbonate ester solvent
 mixts. for secondary lithium battery electrolytes)
 RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L78 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2002:253397 HCAPLUS [Full-text](#)

DN 136:281969

TI Nonaqueous electrolyte solution and secondary lithium battery using the electrolyte solution

IN Hamamoto, Shunichi; Abe, Hiroshi; Ushikoshi, Yoshihiro; Hattori, Takayuki; Matsumori, Yasuo

PA Ode Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI	JP 2002100399	A	20020405	JP 2000-284790	20000920
EP/JP	JP 2000-284790		20000920		
OS	MARPAT 136:281969				

AB The electrolyte solution contains acetylene derivs. having XO(CRR')n- (X = -COOR", -COR", -SO2R", R, R', and R" are C1-12 alkyl, C3-6 cycloalkyl, or aryl groups, R and R' may also be H) group(s) attached to the triple bond C atom(s).

IT 96-49-1, **Ethylene carbonate**
 108-32-7, **Propylene carbonate**
 79493-91-7

RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing acetylene derivs. for secondary lithium batteries)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L78 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2001:814341 HCAPLUS [Full-text](#)
 DN 135:360189
 TI Electrolyte solutions for secondary lithium batteries and the batteries
 IN Hamamoto, Shunichi; Abe, Hiroshi; Ito, Akikazu; Matsumori, Yasuo
 PA Ube Industries, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001313072	A	20011109	JP 2000-129073	20000428
	US 6479191	B1	20021112	US 2000-598112	20000621
	CN 1322027	A	20011114	CN 2000-126442	20000626
	CN 1185746	C	20050119		
	HK 1041562	A1	20050610	HK 2002-103162	20020429
EPAT	JP 2000-129073	A	20000428		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 135:360189

AB The electrolyte solns. contain an alkyl carbonate deriv
 $\text{R1C.tplbond.C(CHR2)nOCOO(CHR3)nC.tplbond.CR4}$, where R1-4 = C1-12 alkyl, c3-6
 cycloalkyl, or aryl groups or H and n = 1 or 2.

IT 96-49-1, **Ethylene carbonate**
 108-32-7, **Propylene carbonate**

RL: DEV (Device component use); USES (Uses)

(electrolyte solns. containing diallylalkyl carbonates for secondary
 lithium batteries)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



IT 79493-91-7, **Dipropargyl carbonate**
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. containing dialkylalkyl carbonates for secondary lithium batteries)
RN 79493-91-7 HCAPLUS
CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L78 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2001:692246 HCAPLUS [Full-text](#)

DN 135:229392

TI Nonaqueous electrolyte solutions and secondary nonaqueous electrolyte batteries

IN Yamada, Manabu; Kubota, Naohiro; Takeuchi, Yasunori

PA Denso Co., Ltd., Japan; Asahi Denka Kogyo K. K.

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001256995	A	20010921	JP 2000-68400	20000313
	JP 4093699	B2	20080604		
PKAI	JP 2000-68400		20000313		
OS	MARPAT 135:229392				

AB The electrolyte solns. have an electrolyte salt dissolved in an organic solvent and contain a O containing aliphatic compound having alkynyl and/or alkynylene groups that do not contain activated H. The compound is preferably RX(R'X')nR", where R, R" = C1-8 alkyl, alkenyl, or alkynyl groups, R' = C1-4 alkylene, alkenylene, or alkynylene groups, ≥ 1 of R, R' and R" = alkynyl or alkynylene groups; X and X' - ether bonds, ester bonds, and/or carbonate ester bonds; n = 0 or 1. The electrolyte salts are inorg. or organic Li salts. The batteries use the electrolyte solns.

IT 96-49-1, **Ethylene carbonate**

RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte solns. contain oxygen containing alkynyl compds for

secondary lithium batteries)

RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



IT 79493-91-7

RL: MOA (Modifier or additive use); USES (Uses)

(nonaq. electrolyte solns. contain oxygen containing alkynyl compds for secondary lithium batteries)

RN 79493-91-7 HCAPLUS

CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

=> d his

(FILE 'HOME' ENTERED AT 13:28:28 ON 07 JAN 2010)

SET COST OFF

FILE 'HCAPLUS' ENTERED AT 13:28:42 ON 07 JAN 2010

L1 1 S US20060177742/PN OR (US2006-564852 OR WO2004-JP10194 OR JP200
 E ABE/AU
 L2 3 S E3
 E ABE K/AU
 L3 1867 S E3-E6
 E ABE KO/AU
 L4 729 S E3,E4,E20
 E KOJI/AU
 L5 3 S E3,E4
 E KO JI/AU
 E KO J/AU
 L6 65 S E3,E4
 E MIYOSHI/AU
 L7 2 S E3
 E MIYOSHI K/AU
 L8 179 S E3,E31
 E KAZUHIRO/AU
 L9 1 S E3
 E KAZU HIRO/AU
 E KUWATA/AU
 L10 1 S E3
 E KUWATA T/AU
 L11 100 S E3,E5
 E TAKAAKI/AU
 L12 2 S E3
 E UBE/CO
 L13 10492 S E41-E71
 L14 12308 S E3-E202

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E E66+ALL
L15 11441 S E2+RT OR E2-E33/PA,CS
L16 1 S L1 AND L2-L15
    SEL RN

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FILE 'REGISTRY' ENTERED AT 13:36:05 ON 07 JAN 2010

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L17 26 S E1-E26
L18 2 S 96-49-1 OR 108-32-7
L19 1 S 872-36-6
L20 2628 S 16.326.4/RID
L21 STR
L22 8 S L21 CSS SAM SUB=L20
L23 207 S L21 CSS FUL SUB=L20
    SAV TEMP L23 LAURA564A/A
L24 33 S L23 AND 1/NC
L25 26 S L24 NOT (160 OR D/ELS OR 180 OR C5H4O3 OR 13C)
L26 174 S L23 NOT L24
L27 26 S L19,L25

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FILE 'HCAPLUS' ENTERED AT 13:42:55 ON 07 JAN 2010

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L28 20721 S L18
L29 26439 S ETHYLENE CARBONATE OR PROPYLENE CARBONATE
L30 144 S ETHYLENE GLYCOL CARBONATE OR PROPYLENE GLYCOL CARBONATE
L31 1259 S 1 3 DIOXOLAN 2 ONE
L32 317 S ETHYLENECARBONATE OR PROPYLENECARBONATE
L33 28419 S L28-L32
L34 1575 S L19
L35 1721 S VINYLENE CARBONATE OR VINYLENECARBONATE
L36 265 S 1 3 DIOXOL 2 ONE
L37 1755 S L27
L38 1116 S L33 AND L34-L37
L39 991 S L38 AND L28 AND L34,L37
L40 125 S L38 NOT L39

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FILE 'REGISTRY' ENTERED AT 13:47:12 ON 07 JAN 2010

FILE 'HCAPLUS' ENTERED AT 13:47:12 ON 07 JAN 2010

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L41 TRA L38 1- RN : 6696 TERMS

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FILE 'REGISTRY' ENTERED AT 13:47:54 ON 07 JAN 2010

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L42 6696 SEA L41
L43 STR
L44 2 S L43 SAM SUB=L42
L45 55 S L43 FUL SUB=L42
L46 STR L43
L47 46 S L46 FUL SUB=L45
L48 3 S L47 AND (C7H8O3 OR C5H6O3 OR C7H6O3)
L49 12 S L17 AND L45
L50 2 S L49 AND L48
L51 3 S L48,L50

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FILE 'HCAPLUS' ENTERED AT 13:58:38 ON 07 JAN 2010

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L52 7 S L51 AND L38

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FILE 'REGISTRY' ENTERED AT 14:08:05 ON 07 JAN 2010

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L53 11 S 124330-20-7 OR 101-84-8 OR 98-06-6 OR 827-52-1 OR 462-06-6 OR
L54 10 S 372-18-9 OR 37-11-3 OR 540-36-3 OR 321-60-8 OR 324-74-3 OR 10
L55 21 S L53,L54
L56 19 S L55 NOT SQL/FA
L57 41 S C6H4F2/MF AND 46.150.18/RID

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L58      8 S L57 NOT ((D OR T)/ELS OR 11C# OR 13C# OR 14C# OR C11# OR C13#
L59      4 S L58 NOT 18F#
L60      1 S L56 AND TERT PENTYL
          E C17H20/MF
L61      245 S E3 AND 46.150.18/RID AND 2/NR
L62      1 S L61 AND TERT PENTYL
L63      22 S L56,L59,L62

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FILE 'HCAPLUS' ENTERED AT 14:18:18 ON 07 JAN 2010

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L64      3 S L52 AND L63
L65      4 S L52 NOT L64
L66      6 S L1-L16 AND L52
L67      3 S L64 AND L66
L68      4 S L65-L66 NOT L67

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FILE 'REGISTRY' ENTERED AT 14:19:46 ON 07 JAN 2010

FILE 'HCAPLUS' ENTERED AT 14:20:40 ON 07 JAN 2010

SET COST ON
SET COST OFF

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L69      29403 S L33-L37
L70      16 S L69 AND L51
L71      4 S L70 AND L63
L72      1 S L71 NOT L64-L68
L73      9 S L70 NOT L64-L68
L74      9 S L72,L73
L75      2 S L74 NOT BATTERY
L76      7 S L74 NOT L75
L77      6 S L76 AND L1-L16
L78      7 S L76,L77

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